

# Model 1000 Terminal Unit for the Siemens Digital Level Sensor

Providing for level monitoring and control

The Model 1000 terminal unit (TU 1000) is a solid-state, stand-alone device designed to monitor up to 16 Siemens digital level sensors (DLS) and to control up to ten digital outputs. The unit is programmable through a standard RS232 serial cable with RTS/CTS connected to a computer running the Model 1000 terminal configuration software or any terminal emulation software.

Local readout for the tank levels and temperature are available via a four-line by 20-character LCD display that will display up to two levels, temperature and tank volume for each tank. Sockets are provided for two optically isolated G4 digital output modules for either alarming or controlling based on user programmable set points for any sensor. The G4 modules can control either AC or DC power to dry contact relays. An expansion board allows for eight additional optically isolated G4 digital output modules. With this expansion board, a total of 10 digital outputs are available.

The unit also is capable of converting the digital signal from a Siemens DLS to an analog output. Optional analog output modules can be added to provide up to eight analog signals for top level, bottom level or temperature. This enables Siemens digital level sensors to be used in a system that has only analog inputs available for receiving tank level data.



## Mechanical specifications

- NEMA 4X enclosure
- Optional eight D/O expansion board can be mounted inside enclosure

## Electrical specifications

- Operating temperature range: -40 °C to +85 °C
- When equipped with LCD display, operating temperature is 0 °C to 70 °C
- Optional display heater available for operation in cold environments
- Power requirements: 12 to 15 VDC

### Power consumption\*

- Standby without display: 75mA
- Standby with display: 85mA
- During scroll - LCD backlight: 210mA (scrolling period is programmable)
- During poll: 100mA (polling time = two-second max)
- Sleep mode: 9mA\*\*
- Analog outputs: 20mA max per channel if unit sources loop power

\*Power consumption does not include connected level sensors.

\*\*Sleep mode is designed for stand-alone display applications with no digital or analog outputs programmed.

### RS232 port

- Provided for configuration and diagnostics
- 9600 baud, no parity, eight data bits, one-stop bit
- Communication: HyperTerminal or similar terminal emulation software using ASCII commands
- Configuration software available

### RS485 port

- Communication to Siemens digital level sensors
- Four-wire communications
- Cycles power to level between polls



### 4-20mA conversion accuracy\*

- Resolution: 16 bit
- Monotonicity: 16 bit min
- Integral non-linearity: +/- 0.01% of FS max offset (4mA) at 25 °C +/- 0.1% of FS max
- Offset drift: +/- 25 ppm of FS/°C max
- Total output error: (20mA) at 25 °C +/- 0.2% of FS max
- Total output drift: +/- 50 ppm of FS/°C max
- VCC supply sensitivity: 50 mA/mV typical

\*Except as limited by sensor and protocol resolution

### Optional digital outputs

- Total of 10 output sockets available
- Two sockets provide for optically isolated G4 modules on board (G4 modules sold separately)
- Eight additional sockets with expansion board

For more information about this and other digital level sensor products and applications, contact us at 1 (888) 856-4528 or [oilandgaslcm.energy@siemens.com](mailto:oilandgaslcm.energy@siemens.com).

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